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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,736	09/26/2006	Herve Thellier	277409US6PCT	8352

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SZEWCZYK, CYNTHIA

ART UNIT	PAPER NUMBER
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1741

NOTIFICATION DATE	DELIVERY MODE
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12/29/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/550,736	Applicant(s) THELLIER ET AL.	
	Examiner CYNTHIA SZEWCZYK	Art Unit 1741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 13-18, 20, 21, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over HERRINGTON et al. (US 5,292,356) in view of KUSTER et al. (US 5,713,976).

HERRINGTON teaches a process for bending glass sheets wherein glass undergoes a prebending step of allowing glass sheets to sag under gravity (col. 9 lines 12-16). HERRINGTON discloses that the process can be used for multiple sheets at once (col. 4 lines 28-35). It is inherent that if the male former is more curved than the prebent glass sheets, the central region of the glass sheets would contact the glass first. HERRINGTON discloses that the glass sheets are advanced by the female former toward the male former (col. 5 lines 46-49). HERRINGTON discloses pressing the glass sheets between the male and female formers while still supported by the female former (col. 5 lines 46-49). HERRINGTON teaches that the female former is a conventional outline or ring-type construction (col. 5 lines 43-45), wherein, one of ordinary skill in the art would understand that the most pressure would occur in the peripheral region and sealing a space between the glass sheets is possible result from the pressing. HERRINGTON discloses that a partial pressure is applied to the glass sheets during the pressing step (col. 7 lines 23-29). HERRINGTON discloses that the female former is separated from the pressing while the glass sheets are

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supported by the male former (col. 7 lines 29-33). HERRINGTON discloses that a cooling support is brought under the glass sheets while supported by the male former (col. 7 lines 30-32). HERRINGTON discloses that the partial pressure is discontinued and the glass sheets rest on the cooling support (col. 7 lines 33-36). HERRINGTON discloses that the glass sheets are then transported for cooling outside of the bending cell (col. 4 lines 59-63). HERRINGTON is silent to including a surrounding skirt producing a partial vacuum.

KUSTER teaches a process for bending glass sheets. KUSTER discloses that is advantageous to use a surrounding skirt that provides vacuum because it decreases the air flow required without reducing the flow rate at the edge of the glass sheets. KUSTER discloses that it is possible to achieve the desired partial vacuum and force to correct the bending of the glass sheets and also allows for the use of smaller and less expensive vacuum generators. Therefore, it would have been obvious to one of ordinary skill in the art to use a surrounding skirt in the process of HERRINGTON to achieve the advantages disclosed by KUSTER.

Regarding claim 14, figure 1 of HERRINGTON shows that the glass has a cylindrical bend and figure 3 shows that the rollers (22) have a cylindrical shape.

Regarding claim 15, HERRINGTON teaches connecting the male mold to a negative pressure and maintaining it for a time to bend the glass sheet (col. 7 lines 24-29) and then connecting the male mold to a positive pressure to aid in releasing the glass sheet (col. 7 lines 33-36).

Regarding claim 16, figure 2 of HERRINGTON shows that the glass sheets travel through a tunnel oven (21) to bring about the sagging.

Regarding claim 17, HERRINGTON discloses that the female former rises toward the male former and passes around the sag support (col. 5 lines 47-49). Figure 3 of HERRINGTON shows that the rollers occupy an area within the female former.

Regarding claim 18, the rolls of HERRINGTON can be considered a skeleton since the glass is not completely supported on the surface. It would have been obvious to one of ordinary skill in the art that the glass would have been supported at regions more than 2 cm from the peripheral edge.

Regarding claim 20, HERRINGTON teaches an oven (17) with rolls (19) to transport a glass sheets, wherein the rolls may be considered a skeleton, and a bending cell (15) wherein the bending cell comprises an annular female former which may also be considered a frame (col. 5 lines 44-46) and a convex male former (31). HERRINGTON teaches that the bending system also comprises means for discharging, or lowering, the skeleton (see figure 8), means for moving vertically the female former (col. 5 lines 47-48), and means for applying a partial pressure through the male former (col. 7 lines 23-25).

Regarding claim 21, KUSTER discloses that the area between the skirt and the male former also produces a vacuum (see figure 2).

Regarding claim 23, see the discussion of claim 13. HERRINGTON discloses that the surface of the male former is air permeable (col. 7 lines 44-49).

Regarding claim 24, see the discussion of claim 15 above.

Regarding claim 25, see the discussion of claim 17 above.

Regarding claim 26, see the discussion of claim 18 above.

3. Claim 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over HERRINGTON et al. (US 5,292,356) in view of KUSTER et al. (US 5,713,976) as applied to claims 13-18, 20, 21, and 23-26 above, and further in view of MORIN (US 6,138,477).

HERRINGTON as modified by KUSTER teaches a method for bending glass sheets. Modified HERRINGTON is silent to the bending temperature.

MORIN discloses a method for bending glass sheets wherein the glass is at a temperature of approximately 550 °C when leaving the oven before bending (col. 5, lines 55-57), which is included in the range of instant claim 19. It would have been obvious that this could have been the bending temperature of modified HERRINGTON because MORIN discloses that the glass is kept close to bending temperature while traveling through the oven (col. 4 lines 43-45) whereas modified HERRINGTON also teaches that glass sheets must be heated to their bending temperature in the oven (HERRINGTON col. 4 lines 43-46). Regarding claim 22, MORIN discloses that the method results in a glass with a coefficient of non-developability of greater than 5 (col. 3, lines 10-12), which is incorporated by the range of instant claim 22. It would have been obvious that the glass of modified HERRINGTON could have a similar coefficient of non-developability because both HERRINGTON and MORIN teach that the processes are intended to produce glass products for automobiles (MORIN col. 1 lines 16-17, HERRINGTON col. 4 lines 24-25).

Response to Arguments

4. Applicant's arguments filed October 5, 2010 have been fully considered but they are not persuasive. Applicant argues on page 8 that HERRINGTON only shapes single glass sheets however, at column 4 lines 28-35, HERRINGTON explicitly states that the method can be used to shape "multiple layered sheets of glass". Applicant argues that the glass is a laminate however, although HERRINGTON states that the "multiple layered sheets of glass" may be used in a glass laminate, HERRINGTON does not state that the "multiple layered sheets of glass" are laminated before undergoing the process.

5. Applicant argues on page 9 that HERRINGTON does not teach application of the partial vacuum commences after the glass sheet has made contact with the male former. HERRINGTON recites in column 7 lines 23-29 (as referenced in the above rejection): "The upper mold member is commonly adapted to provide positive and negative air pressure to assist in the shaping and handling of the glass sheets. The negative air pressure, or vacuum, for example may be employed on the shaping surface of the upper mold to assist in the shaping of the glass sheet as the sheet is being pressed between the opposed shaping surfaces." There is nothing in the passage to suggest that the partial vacuum commences before the pressing step. It would have been clear to one of ordinary skill in the art that when HERRINGTON discloses that the partial pressure "may be employed on the shaping surface of the upper mold to assist in the shaping of the glass sheet as the sheet is being pressed" it is clear that the vacuum begins after the pressing step had commenced.

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6. Applicant argues on page 10 that HERRINGTON does not teach applying a positive pressure during the step of applying the partial pressure. The limitation “during the step of applying the partial pressure” reads on the entire time period in which a partial pressure is applied, from initial application to the release of the vacuum. Therefore, the use of positive pressure at the end of the vacuum period, as taught by HERRINGTON, would read on the claim.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CYNTHIA SZEWCZYK whose telephone number is (571)270-5130. The examiner can normally be reached on Monday through Friday 9 am to 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on (571) 272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CS

/Matthew J. Daniels/
Supervisory Patent Examiner, Art Unit
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